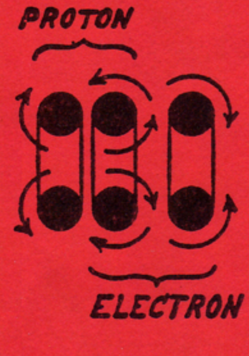
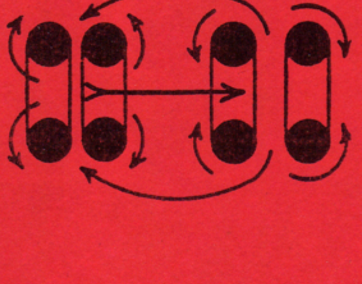
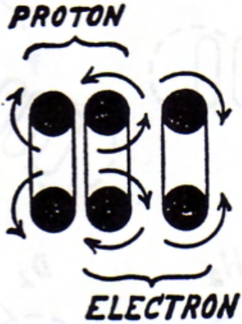
Glimpses Of The Unseen World

CARL FREDERICK KRAFFT







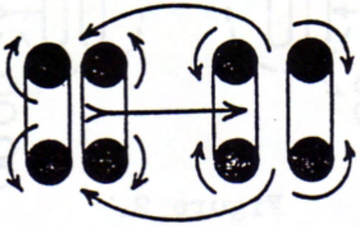


Figure 1.

The neutron and the hydrogen atom--two electrically neutral particles of mass 1, but with entirely different properties and incapable of being converted into each other. If any explanation for this were possible under the nuclear theory, then it would have been found long ago. As the diagrams clearly show, the vortex theory has the explanation ready.

In the days of hydrogen bombs, can we afford to be disinterested in the structure of the neutron?

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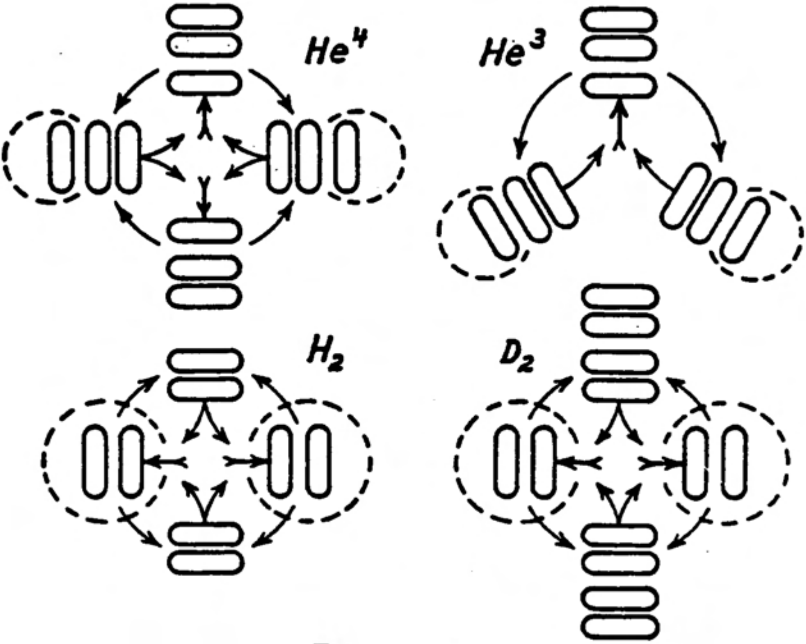

Figure 2.

Ordinary helium and its so-called "lower isotope", as compared with true isotopes like those of hydrogen.

Helium-4 is shown here as a polymer of four neutrons. Helium and other inert gases ionize by the shedding of individual vortex rings, whereas chemical ionization occurs by the liberation of complete electrons.

Helium-4 and helium-3 are both inert gases forming divalent ions, but that is not sufficient to make them isotopes.

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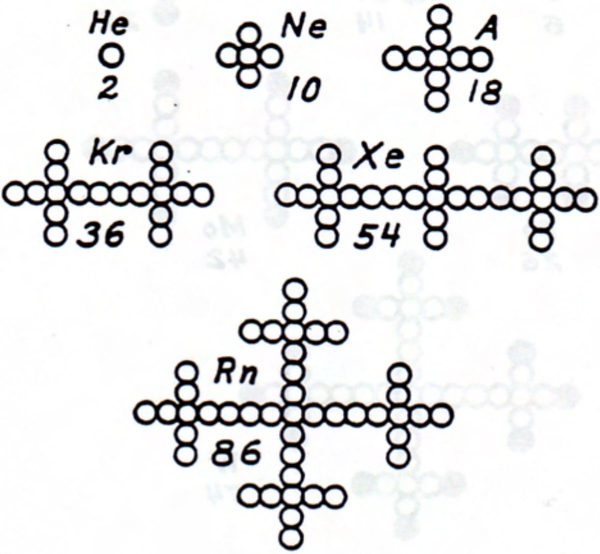

Figure 3.

Inert gas atoms. These consist of clusters of helium groups, each of which adds 2 to the atomic number.

Since inert gas atoms have no peripheral hydrogen groups, they cannot form chemical bonds and therefore remain monatomic and gaseous down to very low temperatures.

When in the liquid state they do not conduct electricity because, unlike the metals, they do not liberate free electrons.

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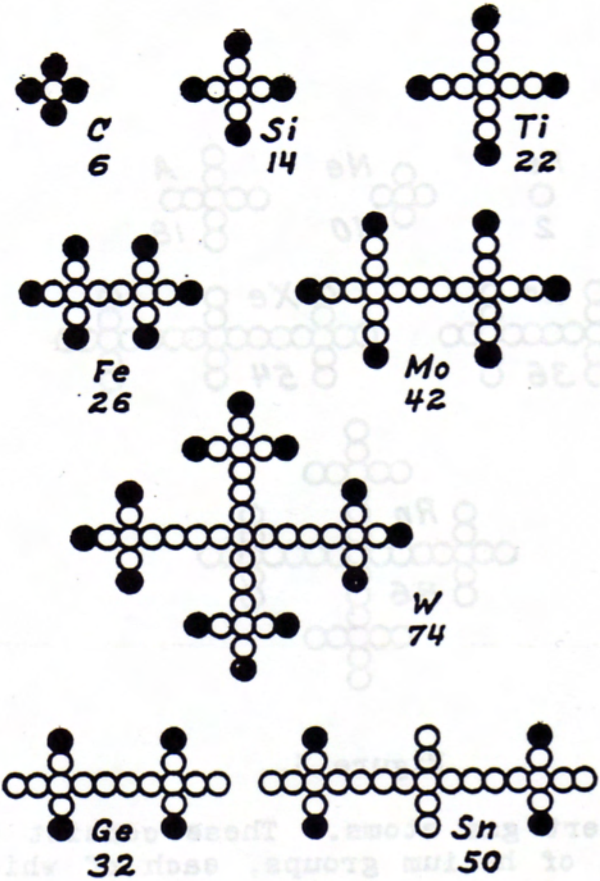

Figure 4.

Atoms with peripheral hydrogen groups which provide valence bonds. The chemical valence of an element is not always equal to the number of hydrogen groups because valence bonds may be branched or may be joined to other bonds in the same atom. Each hydrogen group adds 1 to the atomic number.

Since these atoms have an abundance of hydrogen groups by which they can become anchored to one another, they will resist fusion up to relatively high temperatures.

Unlike the inert gases, these atoms liberate free electrons and will therefore conduct electricity.

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INTRODUCTION

Although the scientific profession has given much attention to 'etherless' theories, there are now in evidence some signs that its fog of anti-etherist prejudice is lifting. A few writers have openly considered the most recent developments in quantum electrodynamics by P.A.M. Dirac in terms of a reinstatement of the ether-class concept. In 1926 the ZEITSCHRIFT FUR PHYSIK, on page 322 of volume 40, published E. Madelung's paper titled "Quantentheorie in hydrodynamischer Form", and this same paper was referred to by a footnote in the PHYSICAL REVIEW in 1954 by D. Bohm and J.P. Vigier, whose impressive article, titled "Model of the Causal Interpretation of the Quantum Theory in Terms of a Fluid with Irregular Fluctuations" begins on page 208 of volume 96. On page 1176 of volume 98 of the PHYSICAL REVIEW (1955), R. Schiller comes very close to a Rumelin-Fricke ether concept in his interpretation of the Dirac equation on the basis of a special fluid with spinning bodies, where electrons may appear as "vortex singularities". (By "singularity" a mathematician means a tiny region wherein the mathematical equation true of the surrounding space fails to hold with plausibility. I can surmise from the above encouraging indications that the following is a safe guess: It seems to be quite permissable to discuss any sub-atomic fluid on the pages of scientific journals, provided the fluid is not called by the obsolete and very ambiguous term "ether" (which also has non-Krafftian connotations) and provided the article elaborates mathematically on one new idea at a time, usually. Some research workers regard the term "ether" as a class term, i.e., a generalized set of a variety of ethers which might be suggested, but the educators to a man are not that equivocal on it -- they hate it. (All etheristic authors take note: research workers are less conservative than educators are, but with them be accurate on semantics and always undogmatic, trying to keep up-to-date on terse modes of expression.)

The writings of C.F. Krafft (1892 --) are, for the most part, self-published monographs, but it is not unlikely that the material in them will eventually appear in mathematical style in the accredited periodicals under the names of other authors, a few of the diagrams being marked "Courtesy of C.F. Krafft", because many diagrams of importance concerning the modern vortex atom are covered by Krafft's copyrights. The reason why Krafft's name has not appeared in the scientific periodicals with wide circulations is discernable. Only recently, after the latest work of Dirac and following Bohm's reinterpretation of the quantum theory in terms of "hidden" variables, has the scientific climate become more

favorable to the fluidist school of thought. Even yet, however, a writer must walk on a tight-rope, as it were, in advocating a fluidist approach to topics which heretofore have been treated only by the monadic or atomistic approach, as for example in the meson theory about nuclear fusion forces. He must justify every innovation, or adopt the new postulates only tentatively after the manner of moot reasoning. And he must use mathematical tools where feasible.

Thus far, those who have agreed with Krafft's theory have not made any attempt to review it mathematically in any journal. The mathematics of ring-vortex motion in hydrodynamics must be quite advanced, and experimentally mandatory boundary-conditions have always been the big headache of hydrodynamical mathematics. Here are a number of mathematical considerations pertinent to vortex motion of the ring type: conformal mapping of doubly-connected space, tensor calculus using cylindrical polar coordinates about the axis of symmetry, complex hyperbolic functions for the path-curves of flow, non-linear variation of solid-angle magnitude of flow-speed, Legendre polynomials of distortional vibration, etc. Some of the necessary theorems probably await future work, and it is for this reason that A.A. Michelson said that very slow progress has been made in the mathematical approach to the ether-vortex atom theory. However, perhaps there is another mathematical route which is less cluttered: It is possible to employ electrical analogues to describe hydrodynamic events, and these can be formulated mathematically. A qualitative verification of each portion of Krafft's atom-model through the algebra of propositions, could prove to be a work of art, and it can already be predicted that a sure and safe technology of nuclear fusion may some day assemble material substances to order under paradoxically low energies with the aid of its theorems.

It has been the dream of philosophers for ages, to be able to discern the exact identity of the ultimate building-block for everything in the universe. In the 19th century, von Helmholtz had been on the right track toward this goal, but because contemporary atomists had insisted upon a totally inviscid ether for the classical vortex-sponge atom of Lord Kelvin, the latter could not survive the impact of later discoveries, such as the existence of radioactivity and possible disassembly of the atom. For a time it seemed that the electron was ultimate, but the discovery of other particles such as mesons made the philosophers' goal seem remote indeed. In 1931 the ultimate building-block of Nature was utilized in the solution of the riddle of why there are two qualities of electrical charge, but at that time an entirely different goal was kept to the fore.

Who was its discoverer? An examiner of patents in Washington, D.C., named Carl Frederick Krafft, who had followed closely

some obscure developments in Germany in the field of world-ether research. Hermann Fricke, Ph.D. of Berlin had been one of a handful or less, of scientists who pertinaciously stuck with the knotty riddle of a workable model for the ether, and he solved it by 1919. Now it is realized what the ultimate building-block had been all along, but this was not Krafft's immediate goal between 1920 and 1931; what he was really after was a workable atom-model which could furnish a clue to the solution of the riddle of life, specifically why it is that living matter is alive on the basis of some sort of mechanistic rationale involving chemical and electromagnetic principles. The ether model developed by H. Fricke was a suitable foundation to build upon, so Krafft applied Fricke's special kind of energy-conserving viscidity to the old Kelvin vortex atom. Presto! Out went the knotting and interlinking of vortex-filaments as forbidden conditions, and there remained for consideration only the circular form of vortex-ring with a suitably large outer-to-inner diameter ratio. A further selection rule, due to the etheric viscidity and its effects in the presence of nearly unavoidable fluctuations of flow, reduced the possible combinations of circular rings to a few in which any two contiguous rings must maintain a <u>rolling</u> contact with each other and have one axis of symmetry in common. After accountingfor all the stable sub-atomic particles in this way, Krafft saw that a lone vortex-ring in space is the true identity of the neutrino, the ultimate building-block of Nature.

Another of Krafft's accomplishments in 1931 was the explanation why there exist two kinds of electric charge, positive and negative. On the end of any sub-atomic compilation of vortex-rings, the additional unit of charge characterized by that terminus is either electropositive or electronegative, depending on whether the terminal ring has at its orifice an outflow or an influx, respectively. All that is sufficient to reverse the qualitative polarity of that unit charge is to append just one vortex-ring, with the stipulation that radially-directed cleavage flow be strictly confluent as a result of rolling contact in the cleavage zone. To append the vortex-ring on its wrong side, results in prompt magneto-frictional rejection of that ring; the wrong side will not adhere.

At least two vortex-rings are essential to the generation of an electric field, provided they form between them an equatorial cleavage zone of confluence, because the clearance between the two rings serves as a single aperture somewhat like the clamping region between washing-machine wringers. It is thus that the vortex-ring doublet is enabled to secure a grip on entering ether-currents so as to rush them through at speeds approaching the speed of light-wave propagation. A neutrino has almost no inertial mass, for one simple reason: Being a single vortex-ring, the neutrino cannot

grip the ether-currents of space effectively, nor can it accelerate them to the speeds required for traction and cyclic circulation. The electronegative electron tends to rid itself of entering ether-currents by retarding their effective speed without changing the rate at which a given volume of ether is transported from place to place, because a reduced speed takes the ether-currents out of an optimum speed-rating for traction, and therefore out of the electron's circulatory influence. An electron does, however, circulate through it the electric flux of a neighboring proton, but without borrowing inertial mass from it upon severance from the proton's field. A positron is almost exactly the same in shape as the electron, but all the speed vectors or velocities are directed in reverse.

This not only accounts for the positron's electric charge, but the contrast in the internal pattern of flow explains its much different way of dealing with entering ether-currents. Instead of slowing these currents down as does the electron, the positron speeds them up and thereby secures the necessary traction to capture them and to acquire from them their inertial mass contributions. Thus, according to Krafft, the positron converts itself into a proton. It should be possible to test this idea experimentally, were it not for the probability that a proton is more safely matured out in interstellar space, where the erstwhile positron has had a good chance of surviving intact long enough to undergo transformation by growth of inertial mass. Near the Earth's surface, the very act of feasting upon ether-currents may cause fission of the positron. There are at least four experimental indications to prove that the proton can be identified as that vortex-ring doublet which has its region of influx at its equator, and it is this influx which creates the kind of gravitational field which O.C. Hilgenberg visualizes. (In fact, Hilgenberg was not the first to ascribe gravitation to ether-sink fields, because B. Riemann, Helm, Yarkovsky, and Bernoulli had considered that same idea rather early.) The inertial mass of a proton is not necessarily divided equally by its two vortex-rings; one of the rings may be clothed more heavily with this field of inertial mass flow than the other. The more massive ring plays its roles in magnetic moments and in Moseley's ordinal atomic numbers, whereas the more emaciated vortex-ring seems to play only electrical roles, such as electrodynamic capture of an electron and the formation of electric "exchange" fields which bind together the constituents of an atom's core.

The above structural definition of a proton could lead to one more useful result. If we append to this proton a third vortex-ring in the manner specified above, then the result should be either of two allotropic forms of the neutron, depending on which end of the proton has acquired the additional neutrino. If attachment has been effected with the lighter end of the proton, then the usual stable form of the neutron has resulted. But if the more

massive portion of the proton has acquired the attached neutrino, then there has resulted a kind of neutron which is more easily disrupted --- the antineutron which nuclear physicists have been predicting recently. A copyrighted diagram of the stable neutron's triplet structure appeared in Krafft's 1931 book titled "CAN SCIENCE EXPLAIN LIFE?" The predicted structure agrees well with recently determined facts. The neutron is indeed a polarized structure having a magnetic moment and also having the greater portion of its inertial mass at its electropositive end.

Immediately the experimental facts about the neutron raise the question of how there can exist both a neutron and a hydrogen atom. Their structural contrasts cannot be derived sanely from the nuclear theory, and in fact the nuclear theory has no explanation to offer. The Krafft vortex-atom scheme of structural definition does provide for two different structures which will satisfy all the experimental requirements. In regard to the hydrogen atom, it must be emphasized once for all that the concept of an orbital centrifugal force is entirely superfluous; the electron cannot coalesce with the proton, anyhow. They magneto-frictionally repulse each other at close range. However, a behaviour simulating that of the Bohr atom could hardly be averted in monatomic hydrogen gas, because of the overwhelming likelihood of off-center collisions. The energy-level jumps are fictitious. The Krafft atom executes "quantum" jumps from one equilibrium state to another, but in a far more natural manner. Exactly how these jumps or dislocations are performed is beyond the scope of this Introduction, and not enough is known about them to make a terse account possible. It is enough now to say that the frequencies of oscillation of portions of an atom depend in part on the centrifugal elasticity of the flow-circuits that happen to be crowded nearest them, and when a protuberance of the atom core is switched over like an automobile's gear-shift lever to a new position of equilibrium, the oscillators inside this protuberance must give out new frequencies. This seems to be the best way to account for Planck's action constant, which is the energy of oscillation multiplied by the time-lapse in one of its cycles. However, it must be admitted that no mathematical work has been done to test this feature of Krafft's theory.

The atoms generally consist of a core and an enveloping "bumper field" which this core generates and maintains at an equilibrium strength. The core is constituted by quartet-groups which occur in two varieties. Most of the quartets of sub-atomic particles are in the nature of helium atoms, and these are always too self-satisfied and too sturdy to participate in the formation of any chemical bonds. The most that these are capable of chemically is to form anomalous electrostatic linkages so as to

account for inter-molecular van der Waals forces, as in surface-tension of liquids and the adhesion of solder to copper, etc., or more likely in the adhesion of grime to a wash-bowl. These are not genuine inter-atomic or inter-ionic chemical bonds. The latter are formed by the hydrogen quartets, not with helium quartets but with other hydrogen quartets of contrasting ionic charge. That is to say, an electropositive hydrogen trio forms with an electronegative hydrogen quintet a composite octagonal structure of alternately arranged protons and electrons, called a single chemical bond. The crystalline rigidity which chemical bonds make possible under this scheme, is easy for those people to visualize who are not under the hypnotic spell of elliptical orbits and electron-clouds. Nor could the wave-atom furnish this rigidity. The Krafft model is ideal for crystallographic purposes also, because its chemical bonds are just the kind that would be most likely to account for rigid structures.

Let us now take up the problem of accounting for the melting points of the elements. The fewer hydrogen quartets there be on an atom core, the lower will be the temperature at which the corresponding element must relinquish its crystalline orderliness in favor of random formations. This temperature is called the "melting point". A cooling molten element will at the same temperature lock itself into its characteristic crystalline formation, which temperature is from this aspect regarded as the "freezing point". If there be no hydrogen quartets whatever on the atom core, then the melting point will be so low that the corresponding element will be in its gaseous state and quite unable to enter into chemical union with any element. There are only six different elements of this "noble gas" class. The more hydrogen quartets there be on an atom core, the higher will be the melting point of the corresponding element, because more thermal kinetic energy is required to sever three chemical bonds than is required to sever one or two such bonds.

There are only three models of the atom available to compete with one another in the attempt to account for the curve of melting points that can be plotted for the whole list of consecutive elements. These are: the electron-orbit model with its concentric shells or electron-cloud atmospheres, the wave-atom model, and the modern vortex atom with its quartets of helium and hydrogen aggregated in a decentralized pattern. The last of these is the only model whose different sides can exhibit contrasting electrodynamic behaviours that are analogous to "sanguine" and "phlegmatic", etc. In regard to the first two models, it is beyond anyone's understanding how the electrons of the helium quartets could behave any differently from the electrons of the hydrogen structures, because therein the schemes of structure are so highly concentric, and furthermore the criterion of

orbital speed is a most pseudo-scientific one at best. The very procedure of forcing the concentric zone models to agree with the facts, would so alter those models as to inadvertently distort the integrity of other facts. The particulate and undulatory variants of the nuclear theory are therefore unworkable. The nuclear theory requires two different types of structure for use in physics and chemistry respectively, whereas Krafft's vortex theory uses the same type of structure for all purposes.

The curve of melting points for the entire list of elements has humps, peaks and valleys. The experimentally determined curve is a standard with which the predicted curves furnished by various atomic theories may be compared. There are a very great number of ways in which it is possible to arrange a given number of predicted melting points, each of which arrangements may correspond to some hypothetically possible model of the atom. Of course, if one of the models makes possible a predicted curve which agrees closely with the standard curve, then that particular model must be very close to the truth; it must that closely resemble the actual atoms of Nature. But how many predicted curves are there which could correspond to the ways in which it is mathematically possible to rearrange the order of the observed melting-point values? For 18 melting-points there are no less than

$$1 \times 2 \times 3 \times 4 \times \ldots\ldots\ldots\ldots\ldots \times 16 \times 17 \times 18$$

possible arrangements of order. This product is called "factorial 18". Its value is very nearly 6.4024×10^{15}, which is about 6,402 trillion. Of course it is ridiculous to suppose that over one trillion different atomic models could be dreamed up by the scientific civilizations of a thousand galaxies! This is logically impossible. We have touched upon only three different atomic models in the above paragraphs. But the significant argument here is that the close agreement between Krafft's model and the actual atoms of Nature is so very, very close, that the probability that this agreement could be due alone to pure coincidence is much less than $1/10^{15}$ or vanishingly small. Krafft has epitomized this line of argument nicely in the following words:

"Throughout the entire periodic table the vortex theory accounts for the different melting points of the various elements, except in a few places where the complications are of such magnitude as to render the problem almost unsolvable. If this is not proof of the correctness of the vortex theory, then it would have to be attributed to mere coincidence, and in this case it would represent only one chance in countless millions."

There are additional arguments that could be advanced in support of Krafft's theory, but the foregoing will suffice.

The systematic study of the new system of atom-building over about 19 years has given me many pleasant feelings of discovery. Theory, especially crystal-clear theory which lays all the cards on the table, can be just as pleasureful as a torrent of facts newly learned at a college, and perhaps more so to the degree that one contributes his own share to the growth of the theory, if it is a highly workable theory. I have repeatedly found this to be true. There are only two or three of us pursuing this hobby, so far as I am aware. Would that there could be hundreds of novices doing this, each one making independent contributions (not money but conceptual details) to the theory, and courteously yielding priority rights to one another!

Vast fields of theoretical application have yet to be tapped, and many clues have yet to be followed to their logical conclusions. Or shall we, as typicalists causing the fluctuating norm to sag further, become addicted to trivial pith and shallow levity of this age, handing down nothing to a better civilization that could in all probability flourish in the future?

V.M.W.

THE ANTIQUITY OF THE ETHER CONCEPT

by
C.F. Krafft

The existence of a single universal substrate for all different substances has been vaguely suggested in the Homeric poems, dating as far back as the ninth century B.C., in which doubt was expressed as to whether there were really as many different kinds of matter as the endless variety of substances that we find in nature. In the Homeric poems, and also in the subsequent teachings of Thales during the sixth century B.C., water was considered to be the universal substrate from which all other substances were produced. Although water is definitely not the ether, still the underlying thought of having a univeraal substrate is almost as old as recorded history itself, and it is therefore not surprising that the relativists have not been successful in their efforts to abolish the ether.

A closer approach to the modern ether theory was made by Anaximander (611 - 547 B.C.), a pupil and successor of Thales. Anaximander did not recognize water as the primary substance, but postulated a substrate, namely the "Infinite", which he described as being more rarefied than air and different from any of the elements, but from which all elements (namely, air, water, fire and earth) were produced, and to which these elements would return when destroyed.

Anaximander's Infinite was commented on by Aristotle with the remark that "it is not necessary to prove that the Infinite should actually be matter that sense can perceive," and similarly we are today told of the ether that it is not a form of matter that we can perceive, but is nevertheless the source of all subatomic particles of which matter is composed. Anaximander declared that the Infinite is in perpetual motion, and that if its motion ever ceased, the world would also cease to exist. This is nothing else than a paraphrased version of the modern ether theory with its vortex protons, electrons and neutrons which owe their very existence to their motion.

The Infinite of Anaximander, like the ether of today, was without any beginning in time or any limit in space. Thales did speak of the eternity of water, but seemed to think that there was a time when no world existed. It was Anaximander who for the first time definitely abandoned the idea of a world with a beginning in time. According to Anaximander, nothing was permanent except the Infinite, which was the source of all matter and all motion. A

more sublime concept of the world has not yet been presented, unless it be the modern ether vortex theory. The later Greeks with their more detailed cosmology strayed farther from the truth.

The immediate successor of Anaximander was Anaximines (588-524 B.C.) who was soon followed by Heraclitus (535 - 475 B.C.) with his "Fiery Ether" or "Divine Fire" as the ultimate substance which seems to have meant about the same as lightning and which was first changed into warm air, then into moisture, and finally into earth, only to be transformed again into the original "Fiery Ether" by a continuous cyclic process.

The term "ether" does not occur in any of the surviving works of Heraclitus, but with the role that he assigned to fire, it would seem permissable to interpret his "fire" as the ether of today. Thus according to Hippolytus, Heraclitus taught that the thunderbolt directs all things, and Aristotle stated that Heraclitus interpreted fire as the soul. Also according to Aetius, Heraclitus called the soul a "fiery substance". This fiery soul was further interpreted by Heraclitus as the world-ruling wisdom, and was sometimes symbolized as Zeus or the Deity which directs all things. By interpreting the ether on the one hand as primitive matter, and on the other hand as divine intelligence, Heraclitus laid the basis for both panpsychism and pantheism, both of which have survived in one form or another until the present day.

CFK

THE EXISTENCE OF AN ETHER

by C. F. KRAFFT
(Author of The Ether and its Vortices,etc.)

In a recent issue of the Round Robin there was a report of a Mark Probert seance which dealt with the existence of an ether. . Although the reasoning was not very clear to me, still the conclusions seemed to be correct. The existence of an ether is not a question that can be answered by a simple "yes" or "no", and when I stated in my book on "The Ether and its Vortices" that there can hardly be any question as to the existence of an ether, I meant a dynamic or turbulent ether and not the quiescent stationary ether of the 19th century.

The Michelson-Morley experiment of 1881 did not disprove the existence of any and every ether, but only of a quiescent ether that is stationary relative to the solar system, and which would produce an ether drift of sufficient magnitude to show up in the experiment. The correct explanation for the Michelson-Morley experiment seems to have been given by George Stokes, who considered the ether as being carried along by the earth's gravitational field; but Stokes theory was rejected by the physics profession on the ground that it was contradicted by astronomical aberration. It seems, however, that astronomical aberration does not nevessarily disprove Stokes' theory, because even if the ether adjacent to the earth is carried along by the earth's gravitational field, there would still be astronomical aberration further out in space.

Since the gravitational field of the earth is tied up with that of the sun, it would be more correct to speak of the combined gravitational field of the earth and the sun, and such a combined field would still be stationary relative to the earth, in complete agreement with the M-M experiment.

There still remains to be considered, however, the rotation of the earth on its axis. Since the earth's axis is approximately perpendicular to the plane of its orbit about the sun, it necessarily follows that since the earth's gravitational field remains tied up with that of the sun, the ether around the earth cannot partake of the rotation of the earth on its axis, but should produce an ether drift of about one-third of a mile per second at the equator, and less elsewhere. That such an ether drift actually exists was proved by the Michelson-Gale experiment in 1925, further details of which will be found in my book.

The finite velocity of light proves that the ether must have mass and inertia, but how is that possible with an ether which is not granular or corpuscular? In my book I advanced the proposition that inertia is really a property of motion rather than a property of matter, be - cause motion without inertia would be a contradiction in terms. Inertia merely means continuity of motion, and without continuity there could not be any motion. Continuity must be either toward and from infinity

or around in a circle or other closed path, and wherever it is in a closed path it will appear as localized inertia which is just another name for mass. With mass thus accounted for, it is not difficult to account for matter, because matter is nothing but a highly concentrated form of localized mass. Less concentrated forms of localized mass are electric and magnetic fields, but this does not include the gravitational field which is something very different.

Similar considerations are also applicable to the ether. Any ether which actually exists must have mass and inertia, because an ether without mass and inertia is inconceivable. If, however, we are correct in our interpretation of mass and inertia as properties of motion, then it necessarily follows that the only kind of ether which can conceivably exist is a dynamic or turbulent ether. The perfectly quiescent and stagnant ether of the 19th century was therefore a theoretical impossibility.

The concept of motion forms an adequate basis for everything in nature, provided we are not too inquisitive as to what it is that moves. We do not need to let this difficulty embarrass us, however, because physicists in dealing with wave mechanics have been confronted with the same difficulty, but have not been seriously deterred thereby. It seems to be the general opinion among 20th century physicists that the concept of motion is complete in itself, even in the apparent absence of anything that moves. On the other hand the 19th century physicists would have pronounced such a view untenable.

It seems that the solution of this problem is to be found in a compromise between the 19th and 20th century viewpoints. Motion without anything that moves is indeed inconceivable, but if we assume that the world has always existed and never had any beginning, then there never was a time when we would have been confronted with any such difficulty. The world at any instant is adequately accounted for by considering it as the result of the world at the instant immediately preceding. Since continuity is a necessary property of motion, the existence of an ether in motion at the present instant necessarily presupposses the existence of a similar ether in motion at the instant immediately preceding, and wherever there is an ether in motion there must also be mass by virtue of that motion.

FURTHER EVIDENCE OF AN ETHER

by
Assoc. C.F. Krafft

In my previous article on "The Existence Of An Ether", the subject was treated from an astronomical standpoint, and it will now be considered from the standpoint of the Sagnac experiment which is just as important as the Michelson-Morley experiment, although not as well-known as the latter.

The Sagnac experiment was first performed in 1913 in France in an effort to disprove Einstein's theory of relativity, and with minor variations has been repeated several times since then, but always with the same positive results. It consisted of splitting a beam of monochromatic light into two component beams which were sent in opposite directions around the periphery of a turntable by means of mirrors until they met again at the opposite end of the table so as to produce interference fringes which were recorded on a photographic plate. When the table with all the apparatus on it was slowly rotated the interference fringes were shifted by an amount equal to what the shift would be if the light waves traveled in a medium that was stationary relative to the earth. As long as the table remained stationary, the light waves in the two component beams would traverse the same distance, namely half the circumference of the table. As soon as the table was rotated, however, the light waves of one beam would have to traverse a greater distance than those of the other beam because the photographic plate on which the interference fringes were recorded would then be moving toward the light waves of one beam and away from those of the other beam.

Since the time of travel in each beam must remain the same, any difference in the lengths of the two paths would have to result in a displacement of the interference fringes in the one direction or the other.

The same positive result was obtained regardless of whether the source of light was carried by the turntable or was on a stationary support adjacent to the turntable, which rules out any attempted explanation based on the movement of the source of light. The only possible explanation for the shifting of the interference fringes when the table is rotated is that the light waves of the two component beams travel in a medium, namely an "ether", which is stationary relative to the earth, or more specifically relative to the earth's gravitational field, and which does not partake to any measurable extent of the rotation of the turntable.

The Sagnac experiment is therefore in complete agreement with George Stokes' interpretation of the Michelson-Morley experiment because the gravitational field of the turntable is negligible in comparison with the gravitational field of the earth.

THE GRAVITATIONAL FIELD

by
C.F. Krafft

Ever since the time of Isaac Newton, physicists have been trying to find the modus operandi of gravitation. French physicists, following the teachings of Descartes, tried to attribute gravitation to celestial vortices, but without much success. LeSage in 1750 tried to interpret it as the effect of mutual shielding, but such an explanation is inadequate when the gravitating bodies are small a s compared with the distance between them. During the late 19th and early 20th century, efforts were made to attribute gravitation to an inward flow of ether toward the gravitating body, but there are several difficulties in the way of such an explanation. Besides the problem of explaining what causes such an inward flow of ether, there is also the problem of explaining what happens to this ether afterwards, and besides it would be difficult on such a basis to account for gravitational acceleration which remains the same, regardless of the velocity of the moving body. Finally Einstein tried to interpret gravitation as a curvature of space, but this was only a mathematical description rather than a physical explanation, and furthermore in his later writings dealing with his unified field theory he tried to show that gravitational force is on a par with electric and magnetic forces, which seems to be closer to the actual truth.

Gravitation is primarily a function of the proton. It has never been shown that electrons exert any gravitational force, but even if they do, it would be negligibly small. Since a neutron is merely a close union of a proton and an electron, its gravitational effect may be attributed entirely to the proton portion of it.

As I have explained in my book on "The Ether And Its Vortices", a proton consists of two vortex rings in rolling contact with each other and with their contiguous sides moving inwardly so as to form a dipolar vortex having inward equatorial flow and outward polar flow. If the polar openings are relatively restricted, then such a structure will exert a Venturi effect on the ether which passes through it so that the outward velocity at the poles will be greater than the inward velocity at the equator. As can be readily demonstrated with an electric fan, such outwardly directed currents will travel over much greater distances than inwardly directed currents. The outwardly directed currents from protons will therefore carry their entrained ether far out into interstellar space and will leave the nearby regions at a reduced ether pressure.

It is these regions of reduced ether pressure which constitute the gravitational field. If another body is positioned within such a region, then the pressure in that region will be further reduced, and especially in the space between the two bodies because both bodies will then be drawing ether from this intermediate space. The two bodies will therefore be urged toward each other by the pressure of the ether on their remote sides where it will be greater than on the sides that face each other, and this difference of pressure will become greater as the bodies move more closely together.

The gravitational mass of a body is generally considered as being equal to its inertial mass, and the two are at least approximately the same, but there may be a slight difference. The gravitational mass can involve only the ether which circulates through the protons as described above, but the inertial mass involves also the vortex filaments themselves. If we assume that the vortex rings which make up a proton are of the same size as those which make up an electron, then the difference between the inertial mass and the gravitational mass of a proton would be equal to the inertial mass of an electron, but only if we ignore their electrostatic fields.

The electrostatic field, however, introduces a complication. As explained in my book, the electrostatic field consists of circulating ether currents which can interlink protons with electrons, or in the case of isolated electric charges, it consists of those ether currents which move in closed circuits and not out to infinity. If we assume that an electron has no gravitational field, then its electrostatic field will include all of its externally circulating ether which will be limited in amount because an electron cannot send out any more ether from its periphery than it can take in at its poles. This outwardly moving ether will leave the electron at relatively low speed -- at about the same speed at which the protons take in their ether. Such slowly moving ether currents will be limited in their range and will constitute the negative electrostatic field. Since protons take in ether at their peripheries, they will also be accompanied by similar slowly moving ether currents, but travelling in the reverse direction, and these will constitute the positive electrostatic field. Positrons are formed by collisions between electrons and differ from protons in that they have not yet had sufficient time to form gravitational ether currents.

If electrons are not subject to the force of gravity, then they would accumulate in interstellar space, and this may be the reason for the finite velocity of light. What we call "empty space" may actually be an electron atmosphere. Occasionally there may be collisions between these electrons, resulting in the formation of positrons, which may then mature into mesons and eventually into protons. Since mesons and protons are subject to gravitational

forces, they will be drawn into the large celestial bodies in the form of cosmic rays. This would also account for the red shift of the light from distant nebulae because the energy that would be required for the tranformation of these electrons into positrons would have to come from the light radiation.

THE ELECTROSTATIC FIELD

by
C.F. Krafft

Matter consists of protons, electrons and neutrons and their various isotopes, among which may be mentioned the "anti-proton" which is really nothing else than a heavy electron. Neutrons will not be further considered here because they do not carry electric charges.

Protons and electrons consist of dipolar vortices, the two vortex rings being in face-to-face rolling contact with each other. In a proton the contiguous surfaces move inwardly whereas in an electron they move outwardly. In a proton the ether is taken in at the periphery and sent out at the poles whereas in an electron it is taken in at the poles and sent out at the periphery.

As explained in my article on gravitation, a proton, because of its Venturi effect, will send out its polar ether with such high velocity that it will travel far out into interstellar space. In an electron, however, the Venturi effect is in reverse, so that an electron will send out its peripheral ether with a velocity that is even lower than its intake velocity at the poles. The external ether circulation of an electron is therefore confined to its immediate neighborhood.

When protons are surrounded by other protons, or when electrons are surrounded by other electrons, there will be a continual fight for elbow-room. The modern ether vortex ring is not such a perfect and noble self-contained entity as was the ether vortex ring in the 19th century. Like many of the other concepts of physics, it also has yielded to the doctrine of indeterminism, but it was exactly this change from a well-defined to a poorly defined vortex ring which has changed failure into success. The modern ether vortex ring needs not only room for itself, but also for the external ether currents associated with it and which are more or less part of it. Protons will therefore be in continual competition with other protons, and electrons with other electrons. Elementary particles with like charges have no use for one another, and try to crowd one another out. That is the reason why like charges of electricity repel each other.

It is a very different situation when protons are in the presence of electrons. The ether currents which are sent out peripherally from the electrons will then be taken in peripherally by the protons, so that there will be no competition between the two, at least not as far as their peripheral ether currents are concerned. Hence when protons and electrons are in tho presence of each other, their only effort will be to get away from like particles by escape toward each other. Unlike charges will behave as though they attract each other.

THE MAGNETIC FIELD -- Part I

by
C.F. Krafft -

Im my previous publications I have represented the magnetic field as a flow of ether in a direction opposite to the direction of movement of the travelling electrons. In his recent pamphlet on a "Unitary Field Theory", Lindy Millard expressed the opinion that this was an error, and that what I referred to was not the magnetic field but the electric field. Apparently it is Millard's view that the magnetic field is not directed longitudinally of the current-carrying wire, but circumferentially thereof.

The electric and magnetic fields are not two different fields, but two different aspects of the same field. Any electric field which is in movement relative to the observer, or relative to which the observer himself is moving, makes itself felt as a magnetic field. Millard was therefore right in what he alleged, but wrong in what he denied.

In the text-books of physics the magnetic field is usually described as extending circularly around the current-carrying wire, but as Millard himself admits, this is only a mathematical fiction. It is true that a compass needle will position itself transversely of a current-carrying wire, and since the N pole of the needle is usually shaped like the head of an arrow, it is very suggestive of a flow of ether circularly around the wire. This will, however, lose all significance when we take into consideration that the N and S poles of a magnet are really mirror images of each other. Instead of a magnetic needle, wecould just as well have used a loop of wire carrying an electric current, which would then arrange itself in such a manner that the two adjacent sections of current-carrying wire will be positioned, not transversely, but longitudinally of each other. We have no experimental evidence that the real magnetic field has any circular or spiral component, and we should not confuse mathematical fictions with physical reality.

THE MAGNETIC FIELD -- Part II

by
C.F. Krafft

In order to show experimentally that the real magnetic field consists of a flow of ether longitudinally and not circumferentially of the current-carrying wire, let us consider the behaviour of two parallel conductors, and also the behaviour of a coil of wire carrying an electric current. Two parallel wires carrying electric currents flowing in the same direction will attract each other magnetically. That is what we would expect if the magnetic field consists of a flow of ether along the lengths of the wires, but if the ether were flowing circumferentially of the wires, then in the space between the two wires it would have to be flowing in opposite directions at the same time, which would cause the two wires to repel each other and move transversely away from each other.

If we have a coil of wire that is carrying an electric current, then the coil will tend to spread out and increase in diameter. That is what we would expect if the flow of ether at each point along the wire is parallel to the wire because the electric currents at opposite sides of the coil will then be flowing in opposite directions, so that the flow of ether in the space inside the coil will also be in opposite directions. This will cause opposite sides of the coil to repel each other so that the coil will tend to widen out and try to increase in diameter, exactly as is observed experimentally. On the other hand if the flow of ether were in the circumferential direction around the wire, then a coil of wire carrying an electric current would tend to contract to a smaller diameter because in the space inside the coil the ether would all be flowing in the same direction. The usual representation of the magnetic field as a displacement in the circumferential direction around the current-carrying wire is therefore pure fiction, not only unsupported by experimental facts, but in direct contradiction to what the experimental evidence plainly shows.

THE SUPERPOSITION OF ELEMENTARY FIELDS OF FORCE

by
C.F. Krafft

With the exception of radiant pressure, there are three and only three elementary forces which act at a distance, namely gravitational, electrostatic and magnetic forces. It has always been difficult to understand how three such forces can act independently of one another in the same space and at the same time. The ether-vortex theory now seems to furnish the answer.

According to our latest views, the force of gravity is caused by a pressure of the ether, rather than by a movement thereof. If we assume that the elementary particles of matter are vortices in the ether, then it seems reasonable to suppose that these will keep the surrounding ether in motion. If there is present only one body, and it is spherical in form, then from considerations of symmetry it necessarily follows that the ether will be in the same condition on all sides of the body. If, however, there are two bodies close to each other, as in the case of a double star, then as I explained in my book on "The Ether and Its Vortices", the condition of spherical symmetry will no longer exist, but instead there will only be axial symmetry. The ether currents of the two bodies will then organize themselves into the form of a dipolar vortex, similar to the field around an electron, but on a much larger scale. The effect of this vortex will be to create a difference in pressure on the proximate and remote sides of the two bodies. The ether in the space between the two bodies will be at a lower pressure than at their remote sides, and such a difference in pressure will push the two bodies toward each other and cause them to fall into each other, unless they are in orbital movement about each other so that centrifugal force will keep them apart.

Electric and magnetic forces are caused, not by pressure of the ether, but by movement of the ether in the form of whirls or eddies. These exist on a much smaller scale and are more localized than gravitational fields of force. Since whirls and eddies can exist regardless of the pressure of the ether, we can readily understand why electric and magnetic forces can act independently of gravitational force, and *vice versa*.

There remains now to be considered only the superposition of electric and magnetic fields upon each other, either coaxially or transversely of each other. Let us consider first their coaxial superposition. As I explained in my book, an electrostatic field

consists of a flow of ether in a direct line from protons in the positive electrode to electrons in the negative electrode, and then back again to the protons through outside paths. If the electrodes are made of iron, and are magnetized, with the N and S poles facing each other, then the magnetic field will consist of a rotation of the ether around their axis of symmetry, and such a rotating or spinning movement of the ether can occur simultaneously with the circulatory movement that corresponds to the electrostatic field. A magnetic field can therefore be superimposed directly upon a coaxial electrostatic field.

If the magnetic field is superimposed transversely upon the electrostatic field, then both fields will be distorted, but not destroyed. The circulating ether which constitutes the electrostatic field will no longer retain its axial symmetry, but it will nevertheless continue to circulate. Similarly the rotating ether which constitutes the magnetic field will pursue irregular and noncircular paths, but will nevertheless continue to rotate. A magnetic field can therefore be superimposed transversely in any direction upon an electrostatic field, without interfering with the latter.

SUCCESSFUL PREDICTIONS UNDER THE ETHER VORTEX THEORY -

by C.F. Krafft -

The ether vortex theory has been leading to successful predictions, almost from the very start. In the late twenties when only protons and electrons were accounted for, it was immediately recognized that there would also have to be a three-ring structure which would be electrically neutral, but since neutrons were not known at that time, the writer thought that there must be something wrong with his theory, and it was therefore put aside for a while. Soon thereafter the neutron was discovered, and the ether vortex theory was then taken up for further study, but it soon became apparent that under this theory protons should attract each other at close range, which would be in direct contradiction to what was taught in all the books on physics. Having learned from experience, however, that it is not wise to be too timid, the prediction was put into print. A few years later "supergravitation" was discovered experimentally -- a complete verification of the writer's prediction, except that he did not call it by that name.

After that, nothing very startling happened until about a decade later when "helium - 3" was discovered, and was proclaimed in all the scientific magazines as being a lower isotope of helium. This gave the writer quite a jolt because it was very obvious that under the ether vortex theory there could not be any lower isotope of helium. The writer, however, once more decided to let his past experience be his guide, so in his 1945 book on "Ether and Matter" he boldly put down in print that "there cannot be any lower isotope of helium", all the scientific literature to the contrary notwithstanding.

At that time there was not enough of the material available to do much experimentation, but a few years later more of it was accumulated, and to the great astonishment of the physics profession, it was found that their widely proclaimed "lower isotope" of helium was completely different in its properties from ordinary helium. It was not an isotope at all, but a different chemical element, exactly as the ether vortex theory required.

Later on when the writer prepared his recent book on "The Ether and its Vortices", he was no longer afraid to make unheard-of predictions, so in drawing a picture of the carbon atom, two anti-protons were incorporated into it, although all the text-books on physics said that the atom consists of only protons, neutrons and electrons -- and then as if to add insult to injury, these anti-protons

were shown as being twice the size of protons. Some time later the anti-proton was discovered experimentally in the debris of smashed atoms, and to the astonishment of the physics profession it was found that the anti-proton is just about twice the size of the proton.

These successful predictions should themselves be sufficient to convince anybody of the correctness of the ether vortex theory, but they constitute only a small fraction of all the evidence that could be presented in support of it, if space would permit. One or two successful applications of a theory may be attributed to coincidence, but when the successes are so numerous that it would represent only one chance in countless millions, then the possibility of coincidence must be ruled out.

THE CONSTITUTION OF THE SUN AND STARS

by C. F. Krafft

According to the accredited science of today, the sun and stars are hot gaseous bodies with temperatures of millions of degrees inside. The scientific profession is so sure of this that anybody who thinks otherwise is simply not given a chance to be heard, although a simple calculation under the gas laws will show that any celestial body similar to the sun, and with a density approximately equal to that of ocean water, would explode immediately if heated to a temperature of millions of degrees centigrade.

Our sun is just an average star, and a mere glance at it should be sufficient to convince anybody that it cannot be gaseous inside. A ball of gas would not have a sharp circular outline like the periphery of the sun. Gaseous clouds do exist elsewhere in the universe, but they do not appear as suns or stars. The periphery of the sun does, however, bear a remarkable resemblance to a horizon of ocean water. This conclusion is further corroborated by the density of the sun which is just slightly greater than that of ocean water -- exactly what would be expected if the sun consists mainly of water, but with a solid core at the center.

If the heat from the sun really came from a hot interior, then as the late Dr. Hermann Fricke of Germany has pointed out, sun-spots should be incandescent and not dark. Numerous photographs have been taken of sunspots from all angles, and these photographs show beyond any possibility of a doubt that sunspots are nothing else than splashes in the luminous layer. The luminous material is thrown to the sides, leaving a wide open hole at the center through which the dark interior of the sun can be viewed -- perhaps not absolutely dark, but much darker than the luminous surface with its temperature of 6000 degrees. According to all authentic science of today, we are supposed to believe that within this dark interior there is raging a temperature of 50,000,000 degrees! It is just too much for the writer to swallow.

The heat of the sun is probably generated by bombardment of its outer atmosphere by cosmic rays consisting of subatomic particles drawn in by the gravitational force of the sun. We have a similar heated layer in the upper atmosphere of our earth where cosmic ray intensity is much greater and the temperature is hundreds of degrees higher than at the surface of the earth. Since the gravitational force at the surface of the sun is thirty times that at the surface of the earth, it is not difficult on this

basis to account for the 6000 degree temperature at the surface of the sun, without making any fantastic assumptions of interior temperatures of millions of degrees. . .

A hot outer atmosphere would not necessarily heat up the interior of the sun, as has often been argued. Heat can travel only by radiation, conduction, or convection. Radiation is stopped immediately by even the thinnest layers of opaque material, and conduction through thousands of miles of poorly conducting material is a very slow process. There remains then only convection, and in a gravitational field the effect of convection is always to produce stratification -- the hotter masses rising to the top and the cooler masses sinking to the bottom. If now we make the reasonable assumption that the effect of convection is greater than the combined effect of radiation and conduction, then any large celestial body with sufficient water on it should act like an automatic refrigerator -- its interior remaining cool indefinitely notwithstanding the generation of heat on its surface. Some of the water on the surface of the sun will undoubtedly be evaporated by the intense heat, and may even become dissociated into oxygen and hydrogen, but the reverse of these processes will also occur, until a condition of equilibrium has been established. The ultimate result will be a gigantic turbulence on the surface of the sun, such as can be observed any time, but which will leave the interior of the sun unaffected.

The cosmic rays which are drawn in by gravitational force consist mainly of subatomic particles such as protons, electrons and neutrons. If these are clusters of vortex rings which were produced in the interstellar ether by the turbulence of light and heat waves, then we have here a cyclic process which could go on indefinitely. The energy which leaves the sun and stars in the form of light and heat radiation is again returned to them in the form of cosmic ray particles, and any matter which is annihilated during this process is similarly returned from interstellar space.

C.F. Krafft (physicist)

Anti-Gravity and Saucer Propulsion

by
C.F. Krafft

Now that we have indisputable proof that intelligently controlled ships of the "saucer" type really exist, we should undertake a more serious study of their method of propulsion. Besides rotary propellers, the only kinds of propulsion that we are familiar with are jet and rocket propulsion, but these would be entirely inadequate to account for interplanetary saucers which leave no vapor trails behind, even during rapid acceleration. The secret of saucer propulsion is probably some electric or magnetic contrivance which we have not yet invented. Let us see if the new ether vortex theory which has been so successful in the field of atomic structure can offer any suggestions.

Besides the problem of counteracting the force of gravity, there is also the problem of producing enormous accelerations. These two problems are so closely related that a solution of one of them would probably also be a solution of the other. In all methods of propulsion that we are familiar with, a mechanical force is exerted upon a physical object so as to counteract its weight, its inertia, or both. There is, however, a limit to what can be done in free space on an unsupported object by the application of externally applied forces, and the limit has almost been reached in jet planes and rockets. Greater forces could be applied, but only at the expense of greater loads of fuel that would have to be carried. Some other method would have to be found before we could hope to undertake interplanetary travel, or to perform in the manner in which the saucers have been observed to perform.

Gravitational forces and inertial forces are due to interaction between material bodies and the ether. Instead of trying to control a body by acting upon it directly, it may be possible to control it more effectively by acting upon the ether which in turn controls the behavior of the body. A change in the state of rest or motion of a body is always caused by a difference of ether pressure on opposite sides of the body. Thus in the case of two celestial bodies which attract each other gravitationally, the ether pressure in the space between them is less than on their remote sides. Such a difference of pressure could be neutralized if some of the ether could be transferred from the high pressure side to the low pressure side.

Since the ether is a fluid, it should be capable of being moved from one place to another. An ordinary bar magnet will not serve this purpose because the N and S poles are mirror images of each other, it being now well established that the ether circulates

around the magnet and not out of one pole and into the other. If a series of magnets be arranged end-to-end so as to form a closed ring, there will be an external ether circulation similar in form to a smoke ring. If two of these closed cores be placed face-to-face against each other in such a manner that their circulating ether currents are in rolling contact with each other, they will form a large-scale replica of either the vortex proton or the vortex electron, depending on whether the ether in the space between them flows inwardly or outwardly.

A similar transfer of either is also produced by an electrostatic condenser. If protons and electrons are dipolar vortices with the two vortex rings in rolling contact with each other, then in a charged condenser there will be a unidirectional flow of ether from the protons of the positive charge to the electrons of the negative charge, the return flow being either around the edges of the plates or between the molecules of the dielectric.

These magnetic and electrostatic devices can be combined in many different ways, as illustrated by the following example. A convex plate of nonmagnetic metal is joined peripherally to each lateral half of the two-piece magnetic core so as to form a hollow shell. This is then covered with insulation and an outer metal shell is placed over the entire structure so as to form a hollow condenser. A static machine is then mounted inside the hollow shell to keep the condenser charged. By the use of suitable controls it should be possible to maintain a regulated flow of ether through this shell in any direction, or into or out of it so as to change the ether pressure inside.

Another method of moving a quantity of ether from one place to another would be by forming it into a vortex ring, similar to a smoke ring. The difference between vortex rings and waves is that when vortex rings travel through space they carry the entrained fluid along with them, whereas when waves travel through space they leave the fluid where it is. Hence when the problem is to transport the fluid from one place to another, it is vortex motion rather than wave motion that should be used. As to how such vortex rings can be generated, ask the Martians. The writer does not know.

However fantastic the above schemes may appear, they do not seem to involve any obvious fallacy, and since they have never been tried experimentally, they should be taken up for further study. It may be true that a closed magnetic core does not maintain any external magnetic field within the usual meaning of that term, but it does maintain an external field of some sort, otherwise it would not be able to induce an electromotive force in a solenoidal coil of wire encircling the core, and this external field can consist of nothing else than a circulation of the ether.

Another comment will probably be that such a system would be contrary to the law of conservation of energy -- a violation of the first

law of thermodynamics. This law, however, applies only to isolated systems, and a process which involves the transfer of ether to and from the outside is hardly an isolated system. There is much that we still do not know about the law of conservation of energy.

The contrivance that is actually used by the saucers may be very different from what has been described above, but my only purpose here is to show that the possibilities of ether mechanics have not been exhausted. On the contrary, our study of that subject has just begun. It is entirely possible that the inhabitants of Mars or some other planet may be a million years ahead of us in these studies, and that they may be as familiar with ether mechanics as we are familiar with gases and liquids. This is not merely an idle speculation. We have seen the saucers do things that we cannot do, which should be sufficient to convince anybody that there is still much for us to learn about the elementary forces of nature. In spite of all the glamour of modern technology, the orthodox science of today is still utterly unable to draw a single plausible picture or diagram of even the simplest elementary particle, or to give any intelligible explanation for any one of the forces that act at a distance. It is only the ether vortex theory that can get us out of this stalemate. It would give us a new method of approach, and may open up a new field for experimental research.

First we should try to find some method of producing regions of increased or decreased ether pressure, and then we should study the effect of such conditions upon the elementary particles of matter. We should also study the radioactivity of single crystals of radioactive salts in an effort to find out if the radiation from the individual atoms is sent out in certain directions only. If that is the case, then the radioactive atoms should all recoil in one direction, and with the same momentum with which the radiation is expelled. If the energy of radioactivity could be confined to one direction by this or some other method, then it should be possible to use this energy of recoil for counteracting the force of gravity in a purely mechanical manner. If the radiation consists of beta particles, and if these are vortices in the ether, then it would also be an effective method for producing movement of the ether in the same direction because a vortex ring always carries the entrained fluid along with it. If we diligently pursue our study of the ether and its vortices, we should be able to make our own saucers before very long.

On the other hand, if we merely continue along our present lines of thought then the problem of producing an anti-gravity device will probably never be solved. With a completely erroneous system of atomic structure, we can hardly hope to gain a better understanding of the elementary forces of nature because these two subjects are intimately tied up with each other. It may be troublesome to change

over from the nucleated atom to the vortex atom, but it will be still more troublesome ten or twenty years from now, and eventually the change will have to be made because there is a continually increasing amount of evidence that is piling up against the nuclear theory. The atom is not constituted as it is pictured in the physics text-books of today, and the sooner we realize it the better. It is significant that the physics profession has never made any effort to attack the new vortex theory of the atom. The reason is obvious. They cannot break it down. Any evidence that can be produced in support of the nuclear theory is equally applicable to the vortex theory, and the latter can explain many things which the nuclear theory cannot explain at all. It is only the vortex theory which has been able to offer any suggestions as to how we may proceed in our efforts to solve the problem of anti-gravity and saucer propulsion.